

On June 2, 2010, Mike Farmwald of Intrepid Networks, and Greg Rosston and Andy Skrzypacz of Stanford University spoke by telephone with John Leibovitz, Tom Peters and Rob Alderfer of the Wireless Telecommunications Bureau regarding the 700 MHz band, public safety spectrum, and technology to enhance public safety capabilities. In addition, Mike Farmwald sent the e-mail below to John Leibovitz.

from **Mike Farmwald** <mike@farmwald.com>
to John Leibovitz
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greg@rosston.com,
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[hide details](#) 9:57 AM (1 hour ago)

cc Mike Farmwald
<mike@farmwald.com>,
Britt Kane <brittkane@intrepid-
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date Wed, Jun 2, 2010 at 9:57 AM
subject Outline of what we would like to talk
about today...
Key Points for LTE-PS conversation

Up to 34 MHz of PS 700 MHz spectrum is “available”

Currently it is pretty chopped up with incompatible (need many “guard bands”) and spectrum-inefficient uses

We suggest that all or nearly all of the PS 700 MHz spectrum (referred to here as “Spectrum”, and including the D-block) be mandated to use LTE-PS (described below), and placed under the control and ownership of a Public Safety Trust

PS Trust (with FCC oversight) would:

- Guide final definition of LTE-PS (with industry participation)

- Define and auction “lease” rights to Spectrum, which allows industry-built and operated infrastructure

- Roughly, builder/operator would own 50% of network capacity, PS Trust would own 50%

- Out of its 50%, PS Trust would provide services to public safety nationwide, lease the rest on an as-available basis (probably as LTE roaming network)

- We estimate that at mature build-out, PS Trust would “own” average capacity of between 100x and 1000x what it needed for PS

- PS trust can use all of its 50% as needed during emergencies (it controls leasing real time)

Lease of the excess capacity should provide PS Trust (at least) several \$B per year (to fund PS specific communications equipment)

Operator/builder has incentive to maintain and improve infrastructure – they get 50% of capacity improvements

What is LTE-PS?

Extension to LTE

Add public safety requirements and needs to LTE

Preemption, PS channels (long range, peer-to-peer communication), talk groups, etc.

Works as compatible superset of LTE (i.e. normal LTE phones work)

Requires only software upgrade to LTE basestations

Allow use of commercial LTE baseband (with improved RF – mostly higher power) for PS-specific equipment

We have “proof-of-principle” definition of LTE-PS